What is claimed is:

1.   A method of generating information for controlling power consumption of a device, the method comprising:

performing an optimization analysis based on a quality of service and power consumption of the device, and a plurality of control factors for controlling the device; and

5   generating a power management profile relating the quality of service and power consumption of the device based on results of the optimization experiment.

2.   The method of claim 1, wherein the optimization analysis is a fractional factorial style experiment.

3.   The method of claim 1, wherein the optimization analysis is a full factorial style experiment.

4.   The method of claim 1, wherein the optimization analysis is one of a Design of Experiments (DOE) experiment, an Orthogonal Array experiment, a Latin Square Design experiment, and a Taguchi style experiment.

5.   The method of claim 1, further comprising selecting one of the plurality of control factors based on the power management profile, wherein the selected control factor is adjusted to control power consumption of the device.

6.   The method of claim 5, wherein the power management profile is generated by filtering results of the optimization analysis.

7.   The method of claim 6, wherein the selected control factor is selected by using the power management profile to determine a power consumption level corresponding to a selected quality of service, determining a result of the optimization

analysis corresponding to the determined power consumption level and selected quality of

5 service, and determining as the selected control factor a control factor corresponding to

said determined result of the optimization analysis.

8. The method of claim 6, wherein the selected control factor is selected by

using the power management profile to determine a quality of service level corresponding

to a selected power consumption level, determining a result of the optimization analysis

corresponding to the determined quality of service level and selected power consumption

5 level, and determining as the selected control factor a control factor corresponding to said

determined result of the optimization analysis.

9. A method of generating information for controlling a device, the method

comprising:

performing an optimization analysis based on a quality of service and an operating

condition of the device, and a plurality of control factors for controlling the device; and

5   generating a management profile relating the quality of service and the operating

condition of the device based on results of the optimization analysis.

10. The method of claim 9, wherein the optimization analysis is a fractional

factorial style experiment.

11. The method of claim 9, wherein the optimization analysis is a full factorial

style experiment.

12. The method of claim 9, wherein the optimization analysis is one of a Design

of Experiments (DOE) experiment, an Orthogonal Array experiment, a Latin Square

Design experiment, and a Taguchi style experiment.

25

13.   The method of claim 9, further comprising selecting one of the plurality of control factors based on the management profile, wherein the selected control factor is adjusted to control the operating condition of the device.

14.   The method of claim 13, wherein the power management profile is generated by filtering results of the optimization analysis.

15.   The method of claim 14, wherein the selected control factor is selected by using the management profile to determine a level of the operating condition corresponding to a selected quality of service, determining a result of the optimization experiment corresponding to the determined level of the operating condition and selected quality of service, and determining as the selected control factor a control factor corresponding to said determined result of the optimization analysis.

16.   The method of claim 14, wherein the selected control factor is selected by using the management profile to determine a quality of service level corresponding to a selected operating level, determining a result of the optimization analysis corresponding to the determined quality of service level and selected operating level, and determining as the selected control factor a control factor corresponding to said determined result of the optimization analysis.

17.   An apparatus suitable for adaptively controlling a system, the apparatus comprising:

an optimization unit configured perform an optimization analysis based on a quality of service and an operating condition of the system, and a plurality of control factors for controlling the system;

26

an management unit configured to generate a management profile relating the quality of service and the operating condition of the system based on results of the optimization analysis; and

a performance table storage unit configured to store the management profile 10 generated by the management unit.

18. The apparatus of claim 17, wherein the optimization analysis is performed based further on a user profile containing information concerning a user's preferences for operating the system.

19. The apparatus of claim 17, wherein the optimization analysis is performed based further on a pattern of usage of the system.

20. The apparatus of claim 17, further comprising a control interface unit configured to adaptively control the system based on the updated management profile.

21. The apparatus of claim 17, wherein the system control unit is configured to select one of the plurality of control factors based on the management profile, and wherein the selected control factor is adjusted to control the operating condition of the system.

22. The apparatus of claim 17, wherein said operating condition of the system is the power consumption of the system.